BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
	)	PR Docket No. 92-257
Amendment of the Commission's	)	RM-7196
Rules Concerning Maritime	)	RM-8031
Concerning Maritime	)	
Communications	)	

To: The Commission

COMMENTS OF MOBILE MARINE RADIO, INC.

Martin W. Bercovici
KELLER AND HECKMAN
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
(202) 434-4144

June 1, 1993

TABLE OF CONTENTS

SUMMARY

Mobile Marine Radio, Inc., urges the Federal Communications Commission to proceed expeditiously to rulemaking to allow enhancements to maritime telecommunications services.

MMR supports trunking, through allowing public coast

opposes the proposal for land mobile sharing of maritime frequencies, inasmuch as (i) no demand for nationwide sharing has been demonstrated, (ii) the land mobile refarming rulemaking will satisfy land mobile spectrum requirements, and (iii) the sharing proposal as drafted is inadequate from a technical standpoint and will lead to material, harmful interference to the maritime operations.

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
	)	**PR Docket No. 92-257**
Amendment of the Commission's	)	**RM-7196**
Rules Concerning Maritime	)	**RM-8031**
Concerning Maritime	)	
Communications	)	

To: The Commission

COMMENTS OF MOBILE MARINE RADIO, INC.

Mobile Marine Radio, Inc. ("MMR"), by its attorney, respectfully herewith submits its Comments in response to the Notice of Proposed Rulemaking and Notice of Inquiry to review the policies and regulations governing maritime telecommunications services.[1/]

I. Introductory Statement

Mobile Marine Radio operates maritime public coast station WLO which provides radiotelephony and radiotelegraphy services to the maritime user community. MMR renders radiotelephony service in the MF and HF frequency bands from its facilities at Coden, Alabama, and VHF radiotelephone service via a seven station network stretching from the Alabama coast north through the Alabama.

Mobile, and Tombigbee Rivers into central Alabama. MMR operates the largest single maritime public coast station facility in the continental United States.

MMR welcomes the Commission's inquiry into the regulations and policies governing maritime telecommunications services. Modernization of the Commission's regulatory scheme is essential if the maritime common carrier industry is to meet competition and continue to maintain economic viability. The ultimate test of whether the regulatory scheme and the services offered under that scheme satisfy the public interest is the willingness of the user community to utilize the services made available. Accordingly, MMR and other maritime carriers must be afforded the opportunity to provide the services desired by the vessel operating community. MMR urges the Commission, upon the conclusion of the comment phase of this Inquiry, to move expeditiously to rulemaking to implement the changes found necessary for the improvement of maritime telecommunication services.

In approaching this rulemaking, the Commission must understand that "communications" is not a homogeneous concept applicable to the maritime user community in the same fashion it applies to other user communities. Specifically, the Commission has observed in the Notice that cellular service has impacted upon maritime carriers.

Without question, that is true. On the other hand, cellular service does not satisfy the mariner's communications requirements. Cellular radiotelephones generally are not "installed" as part of a vessel's telecommunications equipment package; rather, they are brought onboard in portable fashion. Thus, they are used, to the detriment of the public coast station operators, when convenient; and when cellular service is not available, the mariner reverts to public coast station service. Along the coastline and waterways outside of metropolitan areas, cellular coverage often is marginal; and a vessel, unlike a land-operated

accountability. The latter is achieved through assignment of a discrete Selcall number to each vessel so that service can be provided on an automated basis with full confidence in the accountability of the user.

MMR addresses the issues of particular significant to its role in the maritime communications community in accordance with the foregoing premises.

II. COMMENTS

A. Inquiry

(i) Telecommunications requirements:

MMR anticipates that telecommunications requirements of the maritime community will increase substantially over the next 10 to 15 years. For commercial vessels, growth particularly will come in the areas of facsimile and data communications, as office automation technology finds its way to the vessels. For recreational boaters, voice

As reflected in the introduction above, cellular service undoubtedly will be utilized as a service of convenience. Currently, its coverage is inadequate to meet the long-term needs of the maritime user community.

channels by a licensee for trunked system operation through modification of the current limitations on overlapping service contours and requirement for channel loading to justify additional frequency assignments at individual stations.

A common trunking standard is important to facilitate interoperability in the maritime services. On the other hand, given the snail's pace at which the international standardization process functions, the Commission should accord "pioneer status" to coast stations to develop a trunking system. Accordingly, a first installed trunked system on a major waterway, absent evidence of defects or material inferiority, should be allowed to become the de facto standard for that navigational area.

(iii) Digital Selective Calling:

MMR supports a requirement for DSC capability for all marine radios. Standardization is essential; and given the two-decade investment in the present DSC system and the impracticability of developing a different standard on an expeditious basis, the internationally prescribed DSC standard must be the system implemented. Electronic systems continually are subject to refinements and improvements; and if the Commission awaits the ultimate system, it never will

settle on a single standard. Improvements in DSC technology can be implemented in the future, as deemed appropriate.[2/]

The Commission's inquiry concerning optional use of DSC on VHF channels other than Channel 70 is unclear. Subject to coast station control if the DSC serves as a call manager to switch calls after an initiation of contact on Channel 70, it will be necessary to signal via DSC on working channels to achieve a working circuit. On the other hand, vessels should not be allowed independently to initiate calls on VHF working channels in searching for an operating frequency inasmuch as they may interfere with traffic in progress or the establishment of a pre-existing call. Accordingly, the issue raised by the Commission at Paragraph 18 of the notice requires further definition.

With regard to requiring the DSC unit to have the capability to automatically interconnect telephone calls, MMR is strongly in favor of this proposal. The key to improved telecommunications service is offering a direct-

must be capable of initiating contact and switching to a working frequency. Inherent in this concept, as hereinbefore discussed, is the need for each vessel to bear its own unique Selcall identifier.

(iv) Narrow-Band Direct-Printing:

The Commission should allow NB-DP data rates in excess of 100 baud. The governing consideration should be conformance with international standards. MMR concurs that any such equipment automatically must revert to 100 baud when interrogated in order to ensure system compatibility and interoperability.

(v) Private carriers:

MMR is opposed to the concept of allowing private coast stations to act as private carriers. Given the limited number of private coast station channels, sharing of those frequencies is essential; and shared use is incompatible with private carrier service.

The Commission's analogy to Part 90 SMR service is misplaced. SMR service is multi-channel in capacity and was instituted on then newly reallocated, and accordingly unused, spectrum. There is nothing magical about the notion of "private" carriage as contrasted with common carriage which induces spectrum efficiency; rather, any benefits realized have accrued through the newly available capacity.

Moreover, the central characteristic of "private carriage" is incompatible with the maritime service.

Universal availability is the hallmark of maritime service, with its underlying concern of advancing maritime safety. From a legal and regulatory perspective, private carriage entails a for-hire service which discriminates in service among users. National Ass'n of Regulatory Utility Commissioners v. FCC, 525 F.2d 630 (D.C. Cir. 1976). To require maritime carriers to discriminate in service to the public is wholly antithetical to the underlying concept of a safety service and, in coastal zones and deep-water ports, would be in violation of the international Radio Regulations. See Rad. Reg. 4048-4050.

(vi) Exclusivity:

The notion of exclusive private coast assignments is

The Commission cannot reasonably expect that maritime carriers can be restricted to serving only the maritime user public and remain viable while land mobile carriers are given access to the maritime market. Maritime carriers must enjoy the opportunity to seek replacement traffic, and otherwise to improve their operations through utilization of excess capacity. Several dozen VHF coast station closures over the last five years should serve as ample evidence to the Commission that maritime carriers cannot survive economically while being limited to a manual service and a limited market which has other options. Accordingly, it is long past the time to allow maritime carriers full access to the user marketplace for their excess capacity.

(viii) Intra-Service Sharing:

MMR has no objection to allowing intra-service sharing in the 2 MHz frequency band. In the 4 MHz band, it is doubtful that frequencies are available; however, this is a very active band and channels should be reserved for common carrier service.

(ix) Automatic Interconnection with PSTN:

As reflected in the discussion in Section (iii) above concerning digital selective calling, automatic connection with the public switch telephone network not only should be permitted, but should be a mandatory service feature through DSC controlled signally. Automatic interconnection will improve maritime communications generally, including

maritime safety, through more efficient use of the radio spectrum and the consequential reduction of channel congestion. Whether operator services are required should be left to the discretion of carrier management, and the Commission should refrain from dictating station operation to maritime carriers, just as the Commission refrains from instructing cellular and other carriers on the nature of service they render to the user community. With automatic interconnection, users can reach the Coast Guard or public safety agencies on a directly-dialed basis if the coast station operator elects not to provide operator services.

(xi) Narrowband:

As previously indicated in (i) above, MMR supports narrowbanding of the VHF spectrum, with 12.5 kHz channeling. Future evolution will require digital or other enhanced modulation schemes, if the maritime service is to survive and prosper.

(xii) Other Issues:

MMR urges the Commission to rescind the operator licensing requirements for maritime coast station operations

transmitters are fixed-frequency or processor controlled; and operators are located miles from the transmitter locations. Requiring licensed operators is wholly unnecessary.

Operator licensing is not required for coast stations under the international Radio Regulations. See Rad. Reg. 3979. Moreover, the Commission has rescinded operator licensing requirements in the public mobile, private land mobile, private operational fixed-microwave and personal radio services. Public Mobile Radio Service, 95 F.C.C.2d 769 (1983), Radio Operator Requirements, 96 F.C.C.2d 1123 (1984). There simply is no rationale for the Commission to maintain operator technical requirements for station operation. 3/

Additionally, MMR urges the Commission to permit fully automated operation of coast stations. With direct interconnection available in various services, including NB-DP and high seas radiotelephone services, there simply is no reason why an operator need be on duty, particularly during "graveyard" shifts when traffic inherently is light. Processor control systems can detect equipment failure and automatically turn off an errant transmitter. Public coast stations need the flexibility to manage their own operations as they deem appropriate in serving the user public.

3/ MMR is not seeking waiver of technical qualifications for individuals who service coast station transmitter equipment.

B. Proposed Rulemaking.

(i) Reclassification of Public Coast Stations as non-dominant common carriers:

MMR previously has submitted comments to the Commission in support of non-dominant status for public coast stations, except for those coast stations which provide both maritime and landline services and so have the opportunity to engage in unfair competitive practices through tieing arrangements and discriminatory treatment of interconnecting maritime carriers. MMR respectfully submits that the record well demonstrates the need, in the latter regard, to treat such carriers as dominant with regard to maritime operations and to require that the maritime and point-to-point services be operated on a separated basis. Accord, Regulation of International Common Carrier Services, 7 FCC Rcd 7331 (1992), errata, 8 FCC Rcd. 452 (1993).

(ii) Private Land Mobile Use of Maritime Frequencies.

Mobile Marine Radio strongly urges the Federal Communications Commission to disapprove its proposal to permit land mobile sharing of maritime public coast station frequencies.

This proposal, as advanced, is in conflict with the thrust of the NOI to improve the quality and use of the maritime service in general and the public coast station service in particular. The crowding of land mobile users into the maritime spectrum will cause harmful interference.

Additionally, not only has need not been shown for the proposed sharing, but also any need for additional land mobile channel capacity to relieve congestion in particular areas which may exist has been overtaken by the land mobile "refarming" rulemaking which looks to materially increase the channel capacity of the land mobile services.

The Commission premises the proposal for land mobile sharing of maritime common carrier frequencies on the allegation by the Council of Independent Communications Suppliers (CICS) that land mobile "channels suffer congestion" while "maritime frequencies are not used in many land-locked regions of the United States."4/ This is derived uncritically from the initiating petition of CICS which proffered the generalized statement that "in many areas of the country, the demand by [industrial/land transportation] eligibles for 150-162 Mhz band systems greatly exceeds the supply of spectrum allocated to those eligibles in that band." 5/ In support of this assertion, CICS cited to the Final Report of Planning Staff, FCC Private Radio Bureau, "Private Land Mobile Telecommunications Requirements," dated August, 1983. That report addresses future private land mobile spectrum requirements for the top 21 metropolitan areas. As reflected in that report, the projected spectrum shortfall

---

4/ Notice at paragraph 37.

5/ RM 7956 at pp. 2-3.

for those 21 areas declines as the size and population density declines; and the projected spectrum shortfall further declines with the introduction of new technology, narrowbanding, increased channel loading, etc. That report

that need exists only in those cities where a spectrum shortfall has been identified and there are no other means of meeting land mobile requirements. Accordingly, any permitted sharing should be limited to those specifically identified geographic areas, in the same fashion that the Commission has permitted land mobile to share UHF broadcast spectrum in certain major metropolitan areas. See, 47 C.F.R. § 90.301-317.

MMR further respectfully submits that the 1992 CICS petition has been overtaken by events and rendered moot. The Commission in PR Docket No. 92-235 has proposed "refarming" of the land mobile spectrum, with an expected increase of 300-500% in spectrum efficiency.7/ With the Commission having a program in place to meet future land mobile spectrum requirements, there simply is no reason for progressing with the sharing proposal advanced in this Notice.

Insofar as the technical aspect of the sharing proposal itself are concerned, they are wholly inappropriate. The Commission in the text of the Notice, and also in the proposed sharing criteria, totally ignores the fundamental considerations that maritime is a safety service and that public coast station operation entails common carrier service. There is no indication in the Notice that the

---

7/ Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, 7 FCC Rcd 8105, 8106 (1992).

safety nature of the maritime services and the common carrier service obligation for the channels under consideration warrant any consideration. Rather, the Commission calculates an arbitrary primary service contour of 27 miles for public coast station operation, with full expectation that radio propagation observes theoretical contour calculations. The total inadequacy of the proposal further is evidenced when the proposed sharing criteria are compared with sharing criteria otherwise applicable in by the land mobile radio services. Under Part 90, including frequency assignments which are shared and are not entitled to the protection accorded to common carrier stations, requisite separations range from 80 miles at 72-76 MHz to 120 miles in the UHF band.8/ The Commission's proposed 55 mile separation is certain to generate harmful interference and seriously degrade maritime common carrier service.

Associated herewith is an Engineering Report prepared by Dr. George Schrenk of CompComm, Inc. which addresses (i) mileage separation, utilizing the separation criteria proposed by CICS, and (ii) the base/mobile frequency

---

8/ In Section 90.257, there is an 80 mile separation requirement in the 72-76 MHz between land mobile and TV channels 4 and 5; under Section 90.261, there is an 85 mile separation for fixed use in the 450-470 MHz band; in Section 90.309, there is a 120 mile separation for land mobile sharing with UHF TV; and at Section 94.63(d)(4)(i), there is a 90 mile co-channel separation requirement for 900 MHz multiple access stations. If 90 mile co-channel separation is required at 900 MHz, a fortiori 55 miles is inadequate at 156-162 MHz where the propagation paths are much longer.

alignment. As set forth in Dr. Schrenk's Report, the Commission has misapplied the separation criteria as recommended by CICS and therefore materially understated the necessary separation between maritime and land mobile stations. Moreover, the Commission inappropriately provided

maritime service; it fails adequately to consider the actual needs of the land mobile service and the other pending opportunities to satisfy those needs, and the technical implementation of the sharing proposal seriously threatens public coast station operations. MMR urges the Commission to decline land mobile sharing of maritime public coast station frequencies beyond sharing specifically limited to the Atlanta, Dallas, Denver and Phoenix metropolitan areas consistent with § 90.301 et seq. of the Commission's Rules.

WHEREFORE, THE PREMISES CONSIDERED, Mobile Marine Radio respectfully urges the Federal Communications Commission to proceed with rulemaking in accordance with the foregoing Comments responsive to the Notice of Inquiry, to recognize maritime common carriage as non-dominant, except for maritime carriers affiliated with public switched network carriers, and to forego sharing of maritime frequencies by land mobile users.

Respectfully submitted,

MOBILE MARINE RADIO, INC.

Martin W. Bercovici
KELLER AND HECKMAN
1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
(202-434-4144)

Its Attorney

Due: June 1, 1993

COMP COMM INC.

900 Haddon Avenue, Fourth Floor
Collingswood, NJ 08108-2167

ENGINEERING REPORT

At the request of Mobile Marine Radio, Inc., Comp Comm, Inc. ("Comp Comm") has reviewed in depth the technical issues presented in the Notice of Proposed Rule Making and Notice of Inquiry ("NPRM/NOI"), PR Docket No. 92-257, dated November 30, 1992.

Comp Comm, through its technical principal, Dr. George L. Schrenk, is qualified to discuss this NPRM/NOI. Comp Comm is an engineering and information service company specializing in the Mobile Radio Industry. Comp Comm is regularly engaged in providing engineering consultation and communication system design services concerning all technical aspects of the Mobile Radio Services. Comp Comm has done extensive work in both the prediction and measurement of radio signals in mobile communication systems.

George L. Schrenk, Ph.D.,, is the Chairman/CEO of Comp Comm. He holds B.S., M.S., and Ph.D. degrees in Physics from Indiana University and an Honorary M.A. degree from the University of Pennsylvania. He is also an Adjunct Professor on the Engineering Faculty of the University of Pennsylvania. His qualifications are both a matter of public record and are also reported in American Men and Women of Science and other biographic publications. He has testified as an expert witness in engineering matters relating to the mobile radio industry before numerous state Public Utility Commissions and before the Federal Communications Commission. From 1983 to 1989, he served very actively on the IEEE Vehicular Technology Society Committee on Radio Propagation and has submitted extensive propagation research, data, and associated analyses to the Committee.

This report and its attachments present Comp Comm's assessment of the technical issues presented in this NPRM/NOI.

Phone (609) 854-1000 FAX (609) 854-8400

INTRODUCTION

This Engineering Report will specifically address the technical issues in the NPRM/NOI surrounding the potential use by I/LT of the frequencies in the 156-162 MHz band currently allocated to the marine services. Of particular importance is the determination of the separation distances necessary to prevent I/LT users from causing harmful electrical interference to the marine service.

We have reviewed the proposed frequency pairing and separation distances in the NPRM/NOI, PR Docket No. 92-257. We have two significant technical problems with the proposal, namely:

- The way the proposed I/LT frequency pairings are assigned to base/mobile stations;

- The proposed co-channel separation distances.

Each of these problems will be considered in detail in this Engineering Report.

Proposed I/LT Frequency pairings

The frequency pairings proposed for I/LT usage utilize the same spacing and center frequencies utilized for the marine channels. There is, however, a major difference. Marine channels utilize the higher frequency of each duplex pair for the coast transmit frequency and the lower frequency for the ship transmit frequency. This means that the "base" frequency is the higher frequency of the duplex pair and the "mobile" frequency is the lower frequency. In contrast, the proposed I/LT usage of these same channel pairs [Appendix A, § 90.283(a)] utilizes the lower frequency as the "base" transmit frequency and the higher frequency as the "mobile" transmit frequency. This means that the base station I/LT transmitter operates on the same frequency as the elevated coast station receiver. This type of pairing will generate the same types of interferences that are found in simplex operations.[1]

An elevated base station transmitter must be located a sizeable distance from a co-channel elevated base station receiver in order for the base station receiver not to receive harmful co-channel interference. This minimum separation distance can readily be determined using the Longley-Rice, Version 1.2.1 Propagation Program. Assume that the minimum protected signal level is 17 dBu with a protection ratio requirement of 12 dB--the

[1]Footnote 69 of this NPRM states that this proposed sharing excludes the port operations channels "because of the increased interference potential associated with simplex operations."